fw

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,358	04/24/2001	Zheng Chen	MS1-686US	8976

22801   7590   11/15/2006

LEE & HAYES PLLC
421 W RIVERSIDE AVENUE SUITE 500
SPOKANE, WA 99201

EXAMINER
LE, NHAN T

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Office Action Summary	Application No.	Applicant(s)
		09/843,358	CHEN ET AL.
		Examiner	Art Unit	
		Nhan T. Le	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 August 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1.   Claims 1, 5, 6, 9, 10, 15-17, 19-21, 23, 26, 29, 32, 36, 41, 42, 45-50, 52, 55, 56,

59 , 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouyang (US

6,674372) in view of Chen (US 6,009,444) further in view of Connolly et al (US

6,005,495).

As to claims 1, 17, 21, 29, 36, 45-50, 52, Ouyang teaches Chinese input method

comprising: a keypad of number keys to receive an input string representative of one or

more phonetic characters (see fig. 1, number 100, col. 7, lines 10-45); a language

system to receive the input string entered via the keypad to generate likely Chinese

language characters based on the input string (see fig. 1, numbers 400, 600, 700, col.

7, lines 10-45); a language model to derive likely Chinese language character based on

the input string (see fig. 1, number 700, col. 7, lines 27-45) and a processor operative

with the key pad (see fig. 1, number 300, col. 7, lines 10-26) and memory (see fig. 1,

number 600, col. 7, lines 10-26) to support at least the following modes: present of the

likely Chinese language characters on a display (see fig. 1, number 200, col. 2, lines 10-

45) selection of the likely Chinese language characters and further input of one or more

Chinese phonetic characters on the keypad (see col. 7, lines 46-67, col. 8, lines 1-32);

Ouyang fails to teach the language system being configured to facilitate input of the

input string and selection of a language character, wherein the number key having

associated letters. Chen teaches the language system being configured to facilitate

input of the input string and selection of a language character (see fig. 1, number 16,

col. 2, lines 10-35, lines 59-67, col. 3, lines 33-46). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to provide

the teaching of Chen into the system of Ouyang in order to speed up the language

conversion process. The combination of Ouyang and Chen fails to teach wherein the

number key having associated letters. Connelly teaches wherein the number key having

associated letters (see fig. 2, col. 1, lines 15-39). Therefore, it would have been obvious

to one of ordinary skill in the art at the time the invention was made to provide the

teaching of Connelly into the system of Ouyang and Chen in order to provide user an

improved method for entering characters on numeric keypad.

As to claims 5, 19, 32, 41, 55, the claims are rejected as to claim 1 above.

As to claim 6, 42, 56, the combination of Ouyang, Chen and Connelly teaches

the device, wherein the language system includes a sentence-based search engine to

derive the language characters based on context of the input string within one or more

words of a common sentence (see Chen col. 4, lines 45-51).

As to claim 9, the claim is rejected as to claim 1 above.

As to claims 10, 59, the claims are rejected as to claim 1 above.

As to claim 15, the combination of Ouyang, Chen and Connelly teaches a scroll control key to present other likely language character (see Chen col. 3, lines 50-67).

As to claims 16, 20, 23, 26, 60, the combination of Ouyang, Chen and Connelly teaches a mobile device embodied as a mobile phone (see Chen col. 2, lines 10-35).

2.   <u>Claims 2, 7, 18, 22, 24, 30, 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouyang (US 6,674372) in view of Chen (US 6,009,444), Connolly et al (US 6,005,495) further in view of Chen (US 6,073,146).</u>

As to claims 2, 18, 22, 30, the combination of Ouyang, Chen and Connelly teaches a mobile device, wherein the phonetic characters are Chinese Pinyin and the language characters. The combination of Ouyang and Chen fais to teach wherein the language character is Chinese Hanzi. Chen teaches wherein the language character is Chinese Hanzi (see Chen Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Chen into the system of Ouyang, Chen and Connelly in order to process phonetic Chinese text and Hanzi.

As to claims 7, 24, 57, Ouyang teaches Chinese input method comprising: a keypad of number keys to receive an input string representative of one or more phonetic characters (see fig. 1, number 100, col. 7, lines 10-45); a language system to receive the input string entered via the keypad to generate likely Chinese language characters based on the input string (see fig. 1, numbers 400, 600, 700, col. 7, lines 10-45); a language model to derive likely Chinese language character based on the input string (see fig. 1, number 700, col. 7, lines 27-45) and a processor operative with the key pad

(see fig. 1, number 300, col. 7, lines 10-26) and memory (see fig. 1, number 600, col. 7,

lines 10-26) to support at least the following modes: present of the likely Chinese

language characters on a display (see fig. 1, number 200, col. 2, lines 10-45) selection

of the likely Chinese language characters and further input of one or more Chinese

phonetic characters on the keypad (see col. 7, lines 46-67, col. 8, lines 1-32); Ouyang

fails to teach the language system being configured to facilitate input of the input string

and selection of a language character, wherein the number key having associated

letters. Chen teaches the language system being configured to facilitate input of the

input string and selection of a language character (see fig. 1, number 16, col. 2, lines

10-35, lines 59-67, col. 3, lines 33-46). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to provide the teaching of

Chen into the system of Ouyang in order to speed up the language conversion process.

The combination of Ouyang and Chen fails to teach wherein the number key having

associated letters. Connelly teaches wherein the number key having associated letters

(see fig. 2, col. 1, lines 15-39). Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to provide the teaching of Connelly

into the system of Ouyang and Chen in order to provide user an improved method for

entering characters on numeric keypad. The combination of Ouyang, Chen and Conelly

fails to teach a statistical language model to convert one or more Chinese phonetic

characters to Chinese character that are not part of the alphabetic using at least

neighboring word in common sentence. Chen teaches wherein the language system

includes a language model to statistically derive the language characters; converts the

phonetic characters to the language characters (see Chen Abstract, col. 18, lines 45-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Chen into the system of Ouyang, Chen and Connelly in order to process phonetic Chinese text and Hanzi.

3.   Claims 3, 4, 31, 32, 37, 39, 40, 53, 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouyang (US 6,674372) in view of Chen (US 6,009,444), Connolly et al (US 6,005,495) further in view of Griffin et al (US 6,489,950).

As to claims 3, 4, 31, 32, 37, 39, 40, 53, 54, the combination of Ouyang, Chen and Connelly fails to teach wherein the likely language characters are presented on the display in an index that associates selection keys of the keypad with the language characters so that user entry of a selection key results in a selection of a corresponding language character and user entry of a non-selection key results in further input; the selection keys being selected based on whether the letters associated therewith follow the phonetic characters already entered. Griffin teaches wherein the likely language characters are presented on the display in an index that associates selection keys of the keypad with the language characters so that user entry of a selection key results in a selection of a corresponding language character and user entry of a non-selection key results in further input; the selection keys being selected based on whether the letters associated therewith follow the phonetic characters already entered (see col. 10, lines 5-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Griffin into the system of Ouyang, Chen and Conelly in order to minimize the number of keystrokes.

4.   Claims 8, 28, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ouyang (US 6,674372) in view of Chen (US 6,009,444), Connolly et al (US 6,005,495),

further in view of Kantrowitz (US 6,292,772).

As to claims 8, 28, 58, the combination of Ouyang, Chen and Connelly fails to

teach a mobile device, wherein the language system includes a character-based bigram

language model and a word-based N-gram language model, where N>2. Kantrowitz

teaches a character-based bigram language model and a word-based N-gram language

model, where N>2 (see col. 2, line 50- col.3, line5). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to provide

the teaching of Kantrowitz into the system of Ouyang, Chen and Conelly in order to

identify the language of individual words in isolation with high accuracy.

5.   Claims 11-13, 34, 35, 43, 44 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ouyang (US 6,674372) in view of Chen (US 6,009,444), Connolly et

al (US 6,005,495) further in view of Kiraz (US 6,272,464).

As to claims 11, 12, 13, 34, 35, 43, 44, the combination of Ouyang, Chen and

Connelly fails to teach the device as recited wherein the language system comprises: a

first name model to detect first names in the input string; a surname model to detect

surnames in the input string; and a character-based bigram language model. Kiraz

teaches a first name model to detect first names; a surname model to detect surnames;

and a character-based bigram language model (see col. 4, line 49- col. 5, line 15 col. 6,

line 61- col. 7, line 10). Therefore, it would have been obvious to one of ordinary skill in

the art at the time the invention was made to provide the teaching of Kiraz into the

system of Ouyang, Chen and Connelly in order to identify potential language origins of

the name.

6.   Claims 14, 27, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ouyang (US 6,674372) in view of Chen (US 6,009,444), Connolly et al (US

6,005,495), further in view of Matsuzuka et al (US 5,838,972).

As to claims 14, 27, 51, Ouyang teaches Chinese input method comprising: a

keypad of number keys to receive an input string representative of one or more phonetic

characters (see fig. 1, number 100, col. 7, lines 10-45); a language system to receive

the input string entered via the keypad to generate likely Chinese language characters

based on the input string (see fig. 1, numbers 400, 600, 700, col. 7, lines 10-45); a

language model to derive likely Chinese language character based on the input string

(see fig. 1, number 700, col. 7, lines 27-45) and a processor operative with the key pad

(see fig. 1, number 300, col. 7, lines 10-26) and memory (see fig. 1, number 600, col. 7,

lines 10-26) to support at least the following modes: present of the likely Chinese

language characters on a display (see fig. 1, number 200, col. 2, lines 10-45) selection

of the likely Chinese language characters and further input of one or more Chinese

phonetic characters on the keypad (see col. 7, lines 46-67, col. 8, lines 1-32); Ouyang

fails to teach the language system being configured to facilitate input of the input string

and selection of a language character, a resident language model residing on a mobile

device to convert Chinese phonetic characters input received from the keypad into likely

Chinese language characters using a first statistical language model, a search engine to

identify the likely Chinese characters, wherein the number key having associated

letters. Chen teaches the language system being configured to facilitate input of the

input string and selection of a language character (see fig. 1, number 16, col. 2, lines

10-35, lines 59-67, col. 3, lines 33-46), a search engine to identify the likely Chinese

characters; wherein the processor functions as the search engine ie. the processor

looks up the desired character in the dictionary (see col. 3, lines 40-46), a resident

language model residing on a mobile device to convert Chinese phonetic characters

input received from the keypad into likely Chinese language characters using a first

statistical language model (see fig. 2, number 34, col.3, lines 38-45). Therefore, it would

have been obvious to one of ordinary skill in the art at the time the invention was made

to provide the teaching of Chen into the system of Ouyang in order to speed up the

language conversion process. The combination of Ouyang and Chen fails to teach

wherein the number key having associated letters. Connelly teaches wherein the

number key having associated letters (see fig. 2, col. 1, lines 15-39). Therefore, it would

have been obvious to one of ordinary skill in the art at the time the invention was made

to provide the teaching of Connelly into the system of Ouyang and Chen in order to

provide user an improved method for entering characters on numeric keypad. The

combination of Ouyang, Chen and Connelly fails to teach a nonresident language model

residing on a remote server, communicatively coupled to the mobile device, to

statistically derive the language characters using a second statistical language model.

Matsukara teaches a nonresident language model residing on a remote server to

statistically derive the language characters using a second statistical language model

(see col. 1, line 47- col. 2, line 3). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to provide the teaching of

Matsukara into the system of Ouyang, Chen and Connelly in order to provide additional

server due to a large dictionary of words.

Response to Arguments

Applicant's arguments filed 08/29/2006 have been fully considered but they are

not persuasive.

As to claims 1, 17, 21, 29, 37, 45, 47, 49, 51, Applicant argues that the applied

reference fails to teach a keypad of number keys to receive an input string

representative of one or more phonetic characters; a language system to receive the

input string entered via the keypad to generate likely Chinese language characters

based on the input string. The examiner disagrees. See claim 1 rejection above.

Secondly, Applicant argues that there are no motivation to combine the applied

reference. In response to applicant's argument that there is no suggestion to combine

the references, the examiner recognizes that obviousness can only be established by

combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the

references themselves or in the knowledge generally available to one of ordinary skill in

the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re*

Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation

are found in Chen reference (col. 3, lines 32-37) and in the knowledge generally

available in the art ie. keypad comprises number keys having associated letter of

alphabet (see Conelly col. 1, lines 15-39). Thirdly, Applicant argues that the applied

reference fails to disclose a seamless mode process. The examiner disagrees. The

applied a seamless mode process (ie. the same phone is pressed several times for its

corresponding and no special key needs to be activated between activation of the two

keys (see col. 3, lines 11-36).

As to claim 17, 45, Applicant argues that the applied reference fails to teach the

claimed "direct key-based search engine". The examiner disagrees. Chen1 teaches the

claimed "direct key-based search engine" wherein the processor functions as the search

engine ie. the processor looks up the desired character in the dictionary (see col. 3,

lines 40-46).

As to claims 14, 27, 51, Application argues that the applied reference fails to

disclose the claim limitation. The examiner disagrees. The applied reference teaches

the claimed limitation. See the rejection above.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
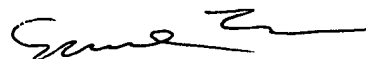
8.　　　Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Le whose telephone number is 571-272-7892. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nhan Le

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600